

WHAT IS CLAIMED IS:

1. A two sided stackable electrical contact structure comprising:
  - a first dielectric layer having a thickness of less than 0.25 millimeters, the dielectric material having a first surface and at least one edge;
  - a first conducting strip including a first end and a second end, the first end of the approximately planar conducting strip coupled to the first surface of the dielectric material, the second end of the conducting strip including a top contact portion that extends beyond the edge of the dielectric material;
  - a first curved spring, the curved spring including a proximal end coupled to the first end of the conducting strip, the first curved spring including a tip end that includes a point separated by a predetermined distance from a plane including the first surface of the first dielectric layer, the predetermined distance greater than the thickness of the first dielectric layer.
2. The two sided stackable electrical contact structure of claim 1 wherein the predetermined distance is between 0.1 millimeters and 0.5 millimeters.
3. The two sided stackable electrical interconnect structure of claim 1 wherein the first curved spring is a stressed metal spring.
4. The two sided stackable electrical interconnect structure of claim 1 wherein the tip of the first curved spring is positioned directly below the conducting strip.

5. The two sided stackable electrical interconnect structure of claim 1 wherein the first curved spring is positioned adjacent to the top contact portion.

6. The two sided stackable electrical interconnect structure of claim 1 wherein the first conducting strip couples to an integrated circuit.

7. The two sided stackable electrical interconnect structure of claim 1 further comprising:

a second dielectric layer.

a second conducting strip coupled to the second dielectric material, the second conducting strip including a top contact portion that extends beyond a corresponding edge of the second dielectric material, the tip of the first curved spring forming an electrical contact with the second conducting strip.

8. The two sided stackable electrical interconnect structure of claim 7 further comprising:

a second curved spring, the second curved spring including a corresponding second proximal end coupled to the second conducting strip.

9. The two sided stackable interconnect structure of claim 8 wherein the first conducting strip couples to a first integrated circuit and the second

conducting strip couples to a second integrated circuit positioned beneath the first integrated circuit.

10. The two sided stackable interconnect structure of claim 7 wherein the first conducting strip is directly above both the first curved metal spring and the second conducting strip.

11. The two sided stackable interconnect structure of claim 7 wherein the first conducting strip is adjacent to the first curved spring and the first curved spring is directly above the second conducting strip.

12. The two sided stackable interconnect structure of claim 1 wherein the first conducting strip is approximately planar.

13. The two sided stackable interconnect structure of claim 12 wherein the second conducting strip is approximately planar.

14. The two sided stackable interconnect structure of claim 1 wherein the first curved spring is metal.

15. The two sided stackable electrical interconnect structure of claim 1 further comprising:

a third dielectric layer;

a third conducting strip coupled to the third dielectric material, the third conducting strip including a top contact portion that extends beyond a corresponding edge of the third dielectric material, the tip of the second curved spring forming an electrical contact with the third conducting strip; and,

a third curved spring, the third curved spring including a corresponding proximal end coupled to the third conducting strip, the third curved spring including a tip that forms a line with the second curved spring tip and the first curved spring tip.

16. The two sided stackable electrical contact structure of claim 1 wherein the first curved spring is formed by removing a release layer between the first conducting strip and the first curved metal spring.

17. The two sided stackable electrical contact structure of claim 1 wherein the curvature of the first curved spring results from an internal stress gradient.

18. The two sided stackable electrical contact structure of claim 17 wherein the internal stress gradient is caused by changing pressure during deposition of a metal that forms the first curved spring.

19. A stacked structure comprising:

a first dielectric layer including a first plurality of electronic components and a first interconnect structuring extending over an edge of the first

dielectric layer, the first interconnect structure including a first spring structure and a first top contact;

a third dielectric layer including a third plurality of electronic components and a third interconnect structure extending over an edge of the third dielectric layer, the third interconnect structure including a third spring structure and a third top contact; and,

a second dielectric layer positioned between the first dielectric layer and the third dielectric layer, the second dielectric layer including a second plurality of electronic components, the second dielectric layer including a second interconnect structure extending over an edge of the second dielectric layer, the second interconnect structure including a second top contact to receive an electrical contact from the first spring contact, and a second spring contact to couple to the third top contact.

20. The stacked structure of claim 19 wherein the first interconnect structure is directly above the second interconnect structure, and the second interconnect structure is directly above the third interconnect structure.

21. The stacked structure of claim 19 wherein the second spring is a stressed metal spring.

22. The stacked structure of claim 19 wherein the second top contact is an approximately planar rigid structure.

23. The stacked structure of claim 19 wherein the second plurality of electronic components is an integrated circuit.

24. The stacked structure of claim 19 wherein the thickness of the structure is less than 500 microns.

25. The stacked structure of claim 19 further comprising an epoxy that holds the second spring structure in contact with the third top contact.

26. The stacked structure of claim 19 further comprising:

a fourth dielectric layer including a fourth plurality of electronic components and a fourth interconnect structure extending over an edge of the fourth dielectric layer, the fourth interconnect structure including a fourth spring structure and a fourth top contact, the fourth dielectric positioned beneath the third dielectric layer such that the third spring structure couples to the fourth top contact.

27. The stacked structure of claim 19 wherein the tip of the first curved spring, the tip of the second curved spring and the tip of the third curved spring from an approximate line.